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| Project ID | Project Type | | Estimated Completion Date | Status |
| 1 | Dairy Emissions | | June 2009 | Drafting Report |
| Report Location | | | | |
| Project Name | | | | |
| National Air Emiss | sions Monitoring (NAE | MS) Project: Air E | missions from California Dairies | |
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| rates, promote a roperations.Include | s emissions from lives national consensus for | r emissions-estima s and GHG emission | nd compile a database for estimatic ation methods/procedures from live ons at a commercial dairy using op | stock |
| PI 1 | Affiliation | ı Pl 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davi | s | Ag Air Research Council (AAR0 | \$250,000 |
| PI 2 | Affiliation | ı PI 2 | Fund Source 2 | Amount 2 |
| | | | | |
| PI 3 | Affiliation | 1 PI 3 | Fund Source 3 | Amount 3 |
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| Related info 1 Status update as o | of May 2008 | | | |
| Related info 2 | | | | |
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| Project ID | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 V. Zhao PI 3 Affiliation PI 3 Fund Source 1 ARB \$40,000 PI 2 V. Zhao PI 3 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations, Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 Y. Zhao Affiliation PI 3 Fund Source 1 ARB \$40,000 Fund Source 2 Amount 2 Fund Source 2 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations, Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 Fund Source 1 ARB \$40,000 PI 2 V. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 Y. Zhao Affiliation PI 2 Y. Zhao Fund Source 1 ARB \$40,000 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | | | | | |
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| Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 2 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 Affiliation PI 1 UC Davis Affiliation PI 2 Fund Source 1 Arbount 1 ARB \$40,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 Y. Zhao Affiliation PI 3 Fund Source 3 Amount 3 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 Affiliation PI 1 UC Davis PI 2 Affiliation PI 2 Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | Project ID | | • | Estimated Completion Date | |
| Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 Fund Source 2 Amount 1 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | 2 | Dairy Er | missions | May 2009 | Drafting Report |
| Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 Fund Source 1 Argunt 1 Argunt 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | Air Emissions from California Dairies, Part I (NAEMS Add-on) [Includes monitoring of VOCs and GHG emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Report Location | | | | |
| emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 Fund Source 1 ARB Affiliation PI 1 UC Davis Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 Fund Source 2 Amount 2 V. Zhao Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Affiliation PI 2 UC Davis Fund Source 1 ARB \$40,000 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | emissions using open-path Fourier transform infrared (OP-FTIR) analyzer] Project Description Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations.Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Name | | | | |
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| rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 | rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 ARB \$40,000 PI 2 Y. Zhao Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Project Description | ı | | | |
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| F. Mitloehner UC Davis ARB \$40,000 PI 2 Y. Zhao PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Fund Source 3 Amount 3 | F. Mitloehner UC Davis ARB \$40,000 PI 2 Y. Zhao PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Fund Source 3 Amount 3 | F. Mitloehner UC Davis ARB \$40,000 PI 2 Y. Zhao PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | F. Mitloehner UC Davis ARB \$40,000 PI 2 Y. Zhao PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Fund Source 3 Amount 3 | F. Mitloehner UC Davis ARB \$40,000 PI 2 Y. Zhao PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 | PI 1 | | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao UC Davis PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao UC Davis PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | | | UC Davis | | \$40,000 |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao UC Davis PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao UC Davis PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | Y. Zhao PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Status update as of May 2008 | PI 2 | | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| Related info 1 Status update as of May 2008 | Related info 1 Status update as of May 2008 | Related info 1 Status update as of May 2008 | Related info 1 Status update as of May 2008 | Related info 1 Status update as of May 2008 | | | | | |
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| Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | PI 3 | | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | Status update as of May 2008 | | | | | |
| <u></u> | | | | | Status update as c | of May 2008 | | | |
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| Project ID Proje | ect Type | Estimated Completion Date | Status |
|--|--|---|-----------------|
| | y Emissions | May 2009 | Drafting Report |
| Report Location | | ' | |
| Project Name | | | |
| Air Emissions from Califorr | nia Dairies, Part II | | |
| Project Description | | | |
| Accurately assess emissio rates, promote a national c | consensus for emissions-estima oring of VOCs and GHG emission | nd compile a database for estimatication methods/procedures from liveons at a commercial dairy using op | stock |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davis | CDFA | \$70,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| Y. Zhao | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | |
| Related info 1 Status update as of May 20 Related info 2 | 008 | | |

| | ct Type | Estimated Completion Date | Status |
|--|--|--|-----------------|
| 4 Dairy | Emissions | May 2009 | Drafting Report |
| Report Location | | | |
| Project Name | | | |
| Air Emissions from Californ | ia Dairies, Part III | | |
| | | | |
| Project Description | | | , |
| rates, promote a national co | onsensus for emissions-estimating of VOCs and GHG emissi | nd compile a database for estimatio ation methods/procedures from live ions at a commercial dairy using op | stock |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davis | UC Davis, College of Ag and Er Sciences | nv'al \$40,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| Y. Zhao | UC Davis | | |
| | | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | |
| Related info 1 Status update as of May 20 Related info 2 | 08 | | |

| Report Location Project Name Process-Based Farm Emiss Project Description | and engineering studies, o | r Emissions from California Dairies develop a feed/waste stream process-land Source 1 ARB | Amount 1 |
|--|---|---|-----------|
| Project Name Process-Based Farm Emiss Project Description Using biological principles a farm emission model for VC PI 1 R. Zhang | and engineering studies, o DC emissions. | develop a feed/waste stream process-l | Amount 1 |
| Process-Based Farm Emiss Project Description Using biological principles a farm emission model for VC PI 1 R. Zhang | and engineering studies, o DC emissions. | develop a feed/waste stream process-l | Amount 1 |
| Project Description Using biological principles a farm emission model for VC PI 1 R. Zhang | and engineering studies, o DC emissions. | develop a feed/waste stream process-l | Amount 1 |
| Using biological principles a farm emission model for VC | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| Using biological principles a farm emission model for VC PI 1 R. Zhang | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| R. Zhang | | | |
| R. Zhang | UC Davis | ARB | |
| | | | \$284,000 |
| F. Mitloehner | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| A. Goldstein | UC Berkeley | | |
| Related info 1 Project description at http:// | /www.arb.ca.gov/ag/caf/R | uihongZhangDairySymposiumOct06.p | df |
| Related info 2 | | | |
| Draft report under review as | s of October 2009 | | |
| • | | | |

| Project ID | Project T | ype | | Estimated Completion Date | Status | |
|--|------------|--------------------------------|--------|----------------------------------|------------|-----------|
| 6 | Dairy Em | nissions | П | January 2007 | Comple | ted |
| Report Location pr | eliminary | data available at: ftp://ftp.a | .arb.o | ca.gov/carbis/ag/agadvisory/krau | iter05jan2 | 26.pdf |
| Project Name | | | | | | |
| Dairy Air Quality Mon | itoring of | ROG and Ammonia in the | e Cer | ntral Valley of California | | |
| Project Description Maintain staffing and | supplies | for field and laboratory wor | rk to | continue the ARB funded ROG | project ur | ntil |
| 2006 | | · | | | , | |
| PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| C. Krauter | | CSU Fresno | | CSU Agricultural Research Initia | tive | \$208,000 |
| PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| D. Goorahoo | | CSU Fresno | | ARB | | |
| PI 3 | | Affiliation PI 3 | | Fund Source 3 | | Amount 3 |
| B. Goodrich | | CSU Fresno | | SJVAPCD | | |
| Related info 1 | | | | | | |
| http://www.epa.gov/tti | n/chief/co | nference/ei15/session6/be | eene | e.pdf | | |
| Related info 2 | | | | | | |
| | n/chief/co | nference/ei14/session1/go | ooral | hoo_pres.pdf | | |
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| Project Type Dairy Emissions Report Location http://www.epa.gov/ttn/chief/conference/ei15/session6/beene.pdf Project Name Evaluating Dairy Ammonia, Methane, and Hydrogen Sulfide Emissions Using Tunable Diode Lasers Project Description Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and will continue through 2008. [No updates since 2006.] PI 1 D. Goorahoo Affiliation PI 1 CSU Fresno CSU Fresno CSU Fresno Affiliation PI 2 CSU Fresno Affiliation PI 3 B. Goodrich Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
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| Project Name Evaluating Dairy Ammonia, Methane, and Hydrogen Sulfide Emissions Using Tunable Diode Lasers Project Description Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and will continue through 2008. [No updates since 2006.] Pl 1 D. Goorahoo Affiliation Pl 1 CSU Fresno Affiliation Pl 2 CSU Fresno ARB Fund Source 1 CSU Agricultural Research Initiative \$98,00 ARB Fund Source 2 ARB ARB Pl 3 B. Goodrich Affiliation Pl 3 CSU Fresno Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
| Evaluating Dairy Ammonia, Methane, and Hydrogen Sulfide Emissions Using Tunable Diode Lasers Project Description Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and will continue through 2008. [No updates since 2006.] PI 1 D. Goorahoo Affiliation PI 1 CSU Fresno Affiliation PI 2 CSU Fresno Affiliation PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Affiliation PI 3 Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf |
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| Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and will continue through 2008. [No updates since 2006.] PI 1 D. Goorahoo Affiliation PI 1 CSU Fresno Affiliation PI 2 CSU Fresno Affiliation PI 2 CSU Fresno Affiliation PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Affiliation PI 3 Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
| Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and will continue through 2008. [No updates since 2006.] PI 1 D. Goorahoo Affiliation PI 1 CSU Fresno Affiliation PI 2 CSU Fresno Affiliation PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Affiliation PI 3 CSU Fresno Affiliation PI 3 Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
| D. Goorahoo CSU Fresno CSU Agricultural Research Initiative \$98,00 PI 2 C. Krauter Affiliation PI 2 CSU Fresno ARB PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Fund Source 2 ARB Fund Source 3 Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
| D. Goorahoo CSU Fresno CSU Agricultural Research Initiative \$98,000 PI 2 C. Krauter Affiliation PI 2 CSU Fresno Fund Source 2 ARB PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Fund Source 3 Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
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| PI 3 B. Goodrich Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
| B. Goodrich CSU Fresno Boreal Lasers Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 |
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| Abstract on page 9 at this site: http://www.epa.gov/ttn/chief/conference/ei14/final2005.pdf |
| Prostract on page 3 at this site. http://www.epa.gov/th/former/conference/ci14/minal2005.pui |

| Project ID Project 8 Dairy Er | Type missions | Estimated Completion Date June 2008 | Status Completed |
|--|--------------------------------|--|---------------------|
| Report Location ARB Libra | ry - http://www.arb.ca.gov/res | earch/apr/past/04-343.pdf | |
| Project Name | | | |
| Dairy Operations: An Evaluati Emissions Reductions In the S | | ne and Potential Mitigation Practice | s for |
| Project Description | <u> </u> | | |
| emission reductions achievab | | te baseline dairy emissions and to en ologies. | |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Krauter | CSU Fresno | ARB | \$250,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| D. Goorahoo | CSU Fresno | possible matching funds - CSUS Fresno Agricultural Research Initi | \$250,000 ative |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| B. Goodrich | CSU Fresno | | |
| Related info 1 | • | <u> </u> | |
| http://www.epa.gov/ttn/chief/c | onference/ei15/session6/beer | ne.pdf | |
| Related info 2 | | | |
| Continuation of previous work | | | |
| | | | |

| Project ID | Project ⁷ | * * | | Estimated Completion Date | Status | |
|---|------------------------------|--|---------|---------------------------------------|-----------|-----------|
| 9 | Dairy Er | missions | | December 2006 | Completed | d |
| Report Location | http://www | .arb.ca.gov/ag/caf/Fran | kMitlo | ehnerDairySymposiumOct06.pdf | | |
| Project Name | | | | | | |
| Air Emission Mitig | ation Techn | iques and Technologies | s for C | alifornia Dairies | | |
| Project Description | า | | | | | |
| Includes lagoon a | | | | tigation practices for potential effe | | |
| PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| F. Mitloehner | | UC Davis | | Merced County via SWRCB and matching | IUC | \$600,000 |
| PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| R. Zhang | | UC Davis | | | | |
| PI 3 | | Affiliation PI 3 | | Fund Source 3 | | Amount 3 |
| P. Robinson | | UC Davis | | | | |
| Related info 1 | | • | | | | |
| Project objective of ttp://ftp.arb.ca.gov | described in /carbis/ag/a | PowerPoint at: gadvisory/mitloehner05 | jan26. | pdf | | |
| | | | | | | |
| Related info 2 | | mission Factors for Dai | rico | | | _ |

| Drojoot ID | | | | | | |
|---|---------------|--|-----------|--|-----------|----------|
| Project ID | Project | | | Estimated Completion Date | Status | |
| 10 | Dairy E | missions | | June 2005 | Compl | eted |
| Report Location | http://jeq.s | scijournals.org/cgi/conter | nt/full/3 | 37/2/615 | | |
| Project Name | | | | | | |
| Volatile Organic | Compound (\ | VOC) Emissions from Co | ows Fe | ed Typical California Rations | | |
| Project Description | on. | | | | | |
| | | olatile fatty acids, phenol | s and | methane (CH4) emitted from no | nlactatin | a di |
| conducted in an | environmenta | al chamber that simulate hanol, ethanol, and CH4 | s com | olled conditions. The experiment mercial concrete-floored freesta measured from cows and/or thei | I cow hou | using |
| PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| F. Mitloehner | | UC Davis | | US EPA | | \$75,000 |
| PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| B. Flocchini | | UC Davis | | | | |
| PI 3 | | Affiliation PI 3 | | Fund Source 3 | | Amount 3 |
| P. Robinson | | UC Davis | | | | |
| | | | | | | |
| Related info 1 | | uments/APCODetermina | tion.pr | <u></u> | | |
| | nair.org/Docu | | | | | |
| | nair.org/Docu | | | | | |
| Related info 1 http://www.4clear | nair.org/Docu | | | | | |
| http://www.4clear Related info 2 UCD Dairy Air Qu | uality Sympo | osium presentation 10-11 | | | | |

| Report Location Pape Community:// D767 Project Name | nunity Relations". Available for | ry Manure Management: Treatment, Ha | - |
|---|--|---|----------------|
| Project Name Effects of Liquid Dairy M | munity Relations". Available for /www.nraes.org/nra_order.taf?_ 704899E01F | \$42 at: | _ |
| Effects of Liquid Dairy M | anure Aeration on Air Quality ar | | |
| | anure Aeration on Air Quality ar | | |
| Project Description | | nd Nutrient Cycling | |
| | | | |
| technology for California | the air and water emission miti dairies to determine whether/to nmental impacts associated wit | gation effects of a wastewater treatmen what extent aerobic treatment systems h manure storage. | t can cost- |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Collar | UCCE - Kings County | UC ANR | \$30,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| F. Mitloehner | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| J. McGarvey | USDA - ARS | UCCE | |
| Related info 2 | | | |

| Dairy Waste 2006 Completed | Project ID | Project ⁻ | Туре | | Estimated Completion Da | ate Status | |
|--|--------------------|----------------------|---------------------------------------|--------------|-----------------------------|-------------|----------|
| http://www.ars.usda.gov/research/publications/publications.htm?SEQ_NO_115=195211 Project Name Characterization of Dairy Waste Management Strategies with Regard to Pathogens and Air Quality Project Description Examine the effect that aerobic and anaerobic treatments have on the microbiological and chemical properties of waste. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 USDA - ARS \$30,300 Pl 2 R. Zhang Affiliation Pl 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | 12 | | | | | | |
| Characterization of Dairy Waste Management Strategies with Regard to Pathogens and Air Quality Project Description Examine the effect that aerobic and anaerobic treatments have on the microbiological and chemical properties of waste. PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Fund Source 1 USDA - ARS \$30,300 Fund Source 2 Amount 2 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Report Location | Abstract a | available at: .ars.usda.gov/resear | rch/publica | tions/publications.htm?SE0 | Q_NO_115=1 | 95211 |
| Project Description Examine the effect that aerobic and anaerobic treatments have on the microbiological and chemical properties of waste. PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Fund Source 1 USDA - ARS \$30,300 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 | Project Name | | | | | | |
| Examine the effect that aerobic and anaerobic treatments have on the microbiological and chemical properties of waste. PI | Characterization o | f Dairy Was | ste Management Stra | itegies with | n Regard to Pathogens and | Air Quality | |
| PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Fund Source 1 USDA - ARS \$30,300 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | | | | | | | |
| F. Mitloehner UC Davis USDA - ARS \$30,300 Affiliation PI 2 R. Zhang PI 3 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | | | ic and anaerobic trea | atments ha | ve on the microbiological a | nd chemical | |
| PI 2 R. Zhang Affiliation PI 2 UC Davis PI 3 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | PI 1 | | | | Fund Source 1 | | Amount 1 |
| R. Zhang PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | F. Mitloehner | | UC Davis | | USDA - ARS | | \$30,300 |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | PI 2 | | | | Fund Source 2 | | Amount 2 |
| Related info 1 | R. Zhang | | UC Davis | | | | |
| | PI 3 | | Affiliation PI 3 | | Fund Source 3 | j | Amount 3 |
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| Related info 2 | Related info 1 | | | | | | |
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| Report Location Several study presentations, see below; no final report located. Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Dairy Emissions September 2009 In progress | September 2009 In progress | | | | |
|--|--|---|------------------------------|-----------------------------|------------------------------------|----------------|
| Report Location Several study presentations, see below; no final report located. Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis Pund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Report Location Several study presentations, see below; no final report located. Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PL2 R. Zhang PI 2 R. Zhang Affiliation PI 2 UC Davis UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang UC Davis Fund Source 2 Amount 2 USDA - ARS Fund Source 2 USDA - ARS Fund Source 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.aiquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Report Location Several study presentations, see below; no final report located. Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis USDA - CSREES \$278,000 PI 2 R. Zhang UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | 13 Dair | | | Status |
| Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 | Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description PI Affiliation PI 1 UC Davis USDA - CSREES \$278,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 R. Zhang UC Davis USDA - ARS PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-pdf Related info 2 http://www.aig.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.aig.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.aiguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Project Name Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description PI | | y Emissions | September 2009 | In progress |
| Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Affiliation PI 2 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Affiliation PI 2 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Report Location Severa | al study presentations, see | below; no final report located. | |
| Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Affiliation PI 2 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Estimating and Reducing Air Emissions from Dairy Feeding Operations Project Description Affiliation PI 1 UC Davis PI 2 R. Zhang Affiliation PI 2 UC Davis Affiliation PI 2 UC Davis Fund Source 1 USDA - CSREES \$278,000 PI 2 R. Zhang Affiliation PI 2 UC Davis USDA - ARS PI 3 C. Krauter Affiliation PI 3 CSU Fresno CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Project Name | | | |
| Affiliation PI 1 F. Mitloehner PI 2 R. Zhang Affiliation PI 2 UC Davis PU 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Affiliation PI 1 F. Mitloehner PI 2 R. Zhang Affiliation PI 2 UC Davis PU 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Affiliation PI 1 F. Mitloehner PI 2 R. Zhang Affiliation PI 2 UC Davis PU 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airguality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | | Air Emissions from Dairy Fo | eeding Operations | |
| F. Mitloehner UC Davis USDA - CSREES \$278,000 Affiliation PI 2 R. Zhang PI 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | F. Mitloehner UC Davis USDA - CSREES \$278,000 Affiliation PI 2 R. Zhang PI 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | F. Mitloehner UC Davis USDA - CSREES \$278,000 Affiliation PI 2 R. Zhang PI 3 C. Krauter Affiliation PI 3 CSU Fresno Related info 1 http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf Related info 2 http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AA | Project Description | | | |
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California Air Resources Board Summary of Agricultural Emissions Studies

1/29/2010

| Project ID | Project Type | | Estimated Completion Date | Status |
|---------------------|---------------------|---------------------|--------------------------------------|------------------|
| 14 | Dairy Nutrient | | June 2008 | Completed |
| Report Location | http://californiaag | riculture.ucanr.org | /landingpage.cfm?article=ca.v061n02p | o90&abstract=yes |
| Project Name | | | | |
| Nutrient Balances | in California Dairy | Herds | | |
| Project Description | n | | | |
| | | | | |
| PI 1 | | tion PI 1 | Fund Source 1 | Amount 1 |
| A. Costillo | UCCI | E Merced | UC ANR | \$40,000 |
| PI 2 | | tion PI 2 | Fund Source 2 | Amount 2 |
| F. Mitloehner | UC D | avis | | |
| PI 3 | | tion PI 3 | Fund Source 3 | Amount 3 |
| D. Bacon | UCCI | E Tulare | | |
| Related info 1 | | | · , | |
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| Related info 2 | | | | |
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| Project ID | Project Type | Estimated Completion Date | Status |
|---|---|---|---------------------------|
| 15 | Dairy Emissions | March 2008 | Completed |
| Report Location | http://www.extension.org/pages.g_Dairy_Cows | /Environmental_Responses_to_Dietary_N | Monensin_in_Lactatin |
| Project Name | | | |
| Effects of Dietary | Rumensin® on GHG and VOC E | missions from Lactating Dairy Cows | |
| Project Description | n | | |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davis | Eli Lilly-Elanco | \$50,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| E. DePeters | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| J. MacGarvey | USDA - ARS | | |
| Related info 1 Hamilton, S.W., E Animal Performar Related info 2 | .J. DePeters, J.A. McGarvey, J. L nce, and Bacterial Population Stru | Lathrop, and F.M. Mitloehner. 2010. Gree ucture Responses to Dietary Monensin Fe | nhouse Gas, d to Dairy |

| Project ID Project | t Type | Estimated Completion Date | Status |
|---|--|--|---------------------------------------|
| | tion Study | May 2010 | In Progress |
| To Educa | tion otday | Iway 2010 | iii i i i i i i i i i i i i i i i i i |
| Report Location | | | |
| Project Name | | | |
| Western Region Dairy Odor | and Air Quality Education | | |
| Project Description | | | |
| farming in the West as a way industries. The grant recipier producing areas of the West | y to promote and guarantee th nts plan to train agricultural pro ern region, on the best manag | is to reduce the environmental imple sustainability of the milk and chapter sustainability of the milk and chapter sustainable, selected from around gement practices available to dairy ashops will be conducted, introduci | eese the dairy producers to |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| P. Ndegwa | WSU | USDA - SARE | \$89,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| F. Mittloehner | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| R. Sheffield | Univ. of Idaho | | |
| Related info 1 Other researchers from NM s Related info 2 | State (R. Hagevoort) and OSL | J (M. Gamroth) | |

| Report Location Report submitted for publication Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Report Location Report submitted for publication | Report Location Report submitted for publication Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Report Location Report submitted for publication Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Report Location Report submitted for publication | Report Location Report submitted for publication Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | | Project | Type | Estimated Completion Date | Status |
|--|---|---|---|---|---|---------------------------------------|-------------|-----------------------------|--------------------------------------|----------------|
| Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 Pl 2 S. Trabue Affiliation Pl 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 Pl 2 S. Trabue Affiliation Pl 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 Pl 2 S. Trabue Affiliation Pl 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | Project Name Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 Pl 2 S. Trabue Affiliation Pl 2 USDA - ARS California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | | | | | |
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| and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | and Their Waste Project Description To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | | | | | |
| To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 1 California Cattlemen Assoc. \$169,590 Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 \$0 Related info 1 Costs to be split between the two funding sources | To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 2 California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 Calfornia Cattlemen Assoc. \$169,590 PI 2 S. Trabue Affiliation PI 2 USDA - ARS Fund Source 2 California Feeder Council \$0 Related info 1 Costs to be split between the two funding sources | | Compound a | and Greenhouse Gas Em | nissions from Growing and Finishing | Feedlot Steers |
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California Air Resources Board Summary of Agricultural Emissions Studies

1/29/2010

| Project ID 19 | | | |
|---------------------|-------------------------------------|--|-------------|
| 19 | Project Type | Estimated Completion Date S | Status |
| | Equipment Study | | Jnknown |
| Report Location | , | | |
| Project Name | | | |
| UC Equipment Match | ning Funds Program | | |
| Project Description | | | |
| | roject cited at http://animalscienc | ce.ucdavis.edu/faculty/Mitloehner/pdf/Grai | nts.pdf |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davis | UC Davis, Chancellor for Research | n \$140,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| | | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | |
| Related info 1 | | | |
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| Project ID | Project 7 | Гуре | Estimated Completion Date | Status |
|------------------------------|------------------------------|--|--|--------------|
| 20 | Manure | Digester | Februrary 2009 | Completed |
| Report Location | http://www | .energy.ca.gov/2009publicatio | ons/CEC-500-2009-009/CEC-500- | 2009-009.PDF |
| Project Name | | | | |
| Covered Lagoon D | igester Emi | ission Measurements | | |
| Project Description | | | | |
| Evaluates the Dair | y Power Pro plogically ba | oduction Program (DPPP). The | CEC funded dairy digester installa e DPPP was initiated to encourag gasification (" iogas") electricity ge | ge the |
| PI 1 | | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| Dairy Power Produ Program | ıction | Western United Resource Dev't, Inc. | CEC, PIER | \$500,000 |
| PI 2 | | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| PI 3 | | Affiliation PI 3 | Fund Source 3 | Amount 3 |
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| Related info 1 | | | , | |
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| Report Location | Project ID | Project ⁻ | Гуре | | Estimated Completion Date | Status | |
|--|-----------------------------------|------------------------------|---|----------------------|---|---------------------------|-----------|
| Project Name Agricultural sources of PM10 and ozone precursors Project Description Compile PM10 and NH3 emission factors. Measure concentrations of VOC relevent to to ozone formation upwind and downwind of dairies PI 1 | 22 | | | | 2005 | | ed |
| Agricultural sources of PM10 and ozone precursors Project Description Compile PM10 and NH3 emission factors. Measure concentrations of VOC relevent to to ozone formation upwind and downwind of dairies PI 1 | Report Location | http://www Waste Ma | .reeis.usda.gov/web/cri nage. Assoc. 55:816-82 | sproject 25 and J | pages/192080.html. Contians c . Air & Waste Manage. Assoc. 5 | itations for 5:826-833 | J. Air & |
| Project Description Compile PM10 and NH3 emission factors. Measure concentrations of VOC relevent to to ozone formation upwind and downwind of dairies PI 1 | Project Name | | | | | | |
| Compile PM10 and NH3 emission factors. Measure concentrations of VOC relevent to to ozone formation upwind and downwind of dairies PI 1 | Agricultural source | s of PM10 a | and ozone precursors | | | | |
| PI 1 R. Flocchini PI 2 C. Parnell PI 3 R. Higashi Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis PI 3 R. Higashi Affiliation PI 3 UC Davis PI 3 Related info 1 | | | | | | | |
| R. Flocchini UC Davis USDA \$374,145 PI 2 C. Parnell PI 3 R. Higashi Related info 1 | Compile PM10 and upwind and downw | d NH3 emis rind of dairie | sion factors. Measure c es | concentr | ations of VOC relevent to to ozo | ne formatio |)n |
| PI 2 C. Parnell Affiliation PI 2 Texas A&M PI 3 R. Higashi Related info 1 Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| C. Parnell Texas A&M Affiliation PI 3 R. Higashi Related info 1 | R. Flocchini | | UC Davis | | USDA | | \$374,145 |
| PI 3 R. Higashi Related info 1 | PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| R. Higashi UC Davis Related info 1 | C. Parnell | | Texas A&M | | | | |
| Related info 1 | PI 3 | | Affiliation PI 3 | | Fund Source 3 | | Amount 3 |
| | R. Higashi | | UC Davis | | | | |
| Related info 2 | Related info 1 | | , | | | | |
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| Project Name Developing a Process Based Model for GHG for California Dairies Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Report Location page 259 at: http://www.ncsu.edu/airworkshop/Ag_Air_Quality_Modeling.pdf Project Name Developing a Process Based Model for GHG for California Dairies Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 F. Mitloehner Affiliation PI 1 Fund Source 1 CEC PIER \$119,000 PI 2 W. Salas Affiliation PI 2 Univ. New Hampshire PI 3 Fund Source 3 Amount 3 | Project ID Project | Туре | Estimated Completion Date | Status |
|---|--|---------------------------------|---|------------------------------------|-------------|
| Project Name Developing a Process Based Model for GHG for California Dairies Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 CEC PIER \$119,000 PI 2 W. Salas Affiliation PI 2 Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | Project Name Developing a Process Based Model for GHG for California Dairies Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 F. Mitloehner Affiliation PI 1 UC Davis Fund Source 1 CEC PIER \$119,000 PI 2 W. Salas Affiliation PI 2 Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | 23 Emissio | ons Modeling | June 2007 | In progress |
| Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. Affiliation PI 1 UC Davis PI 2 W. Salas Affiliation PI 2 Univ. New Hampshire Affiliation PI 3 UC Davis Fund Source 1 CEC PIER \$119,000 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 4 Fund Source 3 Fund Source 4 Fund Source 5 Fund Source 5 Fund Source 5 Fund Source 5 Fund Source 6 Fund Source 1 Fund S | Developing a Process Based Model for GHG for California Dairies Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Report Location page 259 | at: http://www.ncsu.edu/airwo | rkshop/Ag_Air_Quality_Modeling.p | odf |
| Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Project Description Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Project Name | | | |
| Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Developing a Process Based | Model for GHG for California | Dairies | |
| Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies. PI 1 | Project Description | | | |
| F. Mitloehner UC Davis CEC PIER \$119,000 Affiliation PI 2 Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | F. Mitloehner UC Davis CEC PIER \$119,000 PI 2 W. Salas Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | Using biological principles and | d mass balance, develop a cr stimates for dairies. | adle-to-grave emissions model to p | provide |
| F. Mitloehner UC Davis CEC PIER \$119,000 Affiliation PI 2 Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | F. Mitloehner UC Davis CEC PIER \$119,000 PI 2 W. Salas Univ. New Hampshire PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| W. Salas Univ. New Hampshire Affiliation PI 3 UC Davis Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | W. Salas Univ. New Hampshire Affiliation PI 3 R. Zhang Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | | UC Davis | CEC PIER | \$119,000 |
| PI 3 R. Zhang Affiliation PI 3 UC Davis Fund Source 3 Amount 3 Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | PI 3 R. Zhang Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| R. Zhang Comparis Comparison Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | W. Salas | Univ. New Hampshire | | |
| Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | Related info 1 Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | 임 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | Funded with \$500,000 total - \$119,00 for Mitloehner portion Related info 2 | R. Zhang | UC Davis | | |
| Related info 2 | Related info 2 | | \$110,00 for Mithophor portion | | |
| | | i unded with \$500,000 total - | \$119,00 for Millioeriner portion | ı | |
| http://www.westerndairies.org/2009symposium/Mitloehner.pdf | http://www.westerndairies.org/2009symposium/Mitloehner.pdf | Related info 2 | | | |
| | | http://www.westerndairies.org | /2009symposium/Mitloehner. | odf | |
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| EPA conference at: http://www.epa.gov/ttn/chief/conference/ei14/index.html (search Zhang) Project Name |
|---|
| Project Name Development of a Process-Based Ammonia Model for Livestock Sources Project Description Develop a process-based model of ammonia emissions from five types of animal feeding operations: dairy, beef, swine, chicken, and turkey. Pl 1 G. Tonneson Affiliation Pl 1 UC Riverside LADCO \$25 Pl 2 Z. Wang Affiliation Pl 2 UC Davis Fund Source 1 LADCO \$25 Fund Source 2 Amoun Lake Michigan Air Directors Consortium Pl 3 G. Mansell Affiliation Pl 3 ENVIRON Int'l Corp. Related info 1 |
| Development of a Process-Based Ammonia Model for Livestock Sources Project Description Develop a process-based model of ammonia emissions from five types of animal feeding operations: dairy, beef, swine, chicken, and turkey. Pl 1 G. Tonneson Affiliation Pl 1 UC Riverside LADCO \$25 Affiliation Pl 2 Jund Source 1 LADCO \$25 LAM Source 2 Lake Michigan Air Directors Consortium Pl 3 G. Mansell Affiliation Pl 3 ENVIRON Int'l Corp. Related info 1 |
| Project Description Develop a process-based model of ammonia emissions from five types of animal feeding operations: dairy, beef, swine, chicken, and turkey. Affiliation PI 1 UC Riverside PI 2 Z. Wang Affiliation PI 2 UC Davis Fund Source 1 LADCO \$25 Fund Source 2 Amoun Lake Michigan Air Directors Consortium Fund Source 2 Amoun Lake Michigan Air Directors Consortium Fund Source 3 Amoun Affiliation PI 3 ENVIRON Int'l Corp. |
| Develop a process-based model of ammonia emissions from five types of animal feeding operations: PI 1 |
| Develop a process-based model of ammonia emissions from five types of animal feeding operations: PI 1 |
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| PI 2 Z. Wang UC Davis Lake Michigan Air Directors Consortium PI 3 Affiliation PI 3 Fund Source 2 Amoun Lake Michigan Air Directors Consortium Fund Source 3 Amoun ENVIRON Int'l Corp. |
| Z. Wang UC Davis Lake Michigan Air Directors Consortium PI 3 G. Mansell Fund Source 3 Amoun ENVIRON Int'l Corp. |
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| PI 3 Affiliation PI 3 Fund Source 3 Amoun G. Mansell ENVIRON Int'l Corp. Related info 1 |
| G. Mansell ENVIRON Int'l Corp. Related info 1 |
| Related info 1 |
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| Other researchers - J. Fader, K. Zhang, G. Mansell, J. Haasbeek. |
| |
| Related info 2 |
| Abstract on page 9 at: http://www.epa.gov/ttn/chief/conference/ei14/final2005.pdf |
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California Air Resources Board Summary of Agricultural Emissions Studies 1/29/2010

| Project ID | Project | Туре | Estimated Completion Date | Status |
|---|-------------|------------------------------|---------------------------------------|-----------|
| 25 | Educat | tion Study | March 2005 | Completed |
| Report Location | http://wwv | w.cdqa.org/reports/CDQAF | P%20Annual%20Report%202005.pdf | |
| Project Name | | | | - |
| | n Air Modul | le Curriculum for the Califo | ornia Dairy Quality Assurance Progran | n (CDQAP) |
| Project Description | า | | | |
| | | | | |
| PI 1 | | Affiliation PI 1 | Fund Source 1 US EPA | Amount 1 |
| F. Mitloehner | | UC Davis | US EPA | \$50,000 |
| PI 2 | | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| D. Meyer | | UC Davis, CDQAP | | |
| PI 3 | | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| M. Payne | | | | |
| Related info 1 http://www.4clean Related info 2 | air.org/Doc | uments/APCODeterminati | on.pdf | |

| Project ID | Project Typ | e | | Estimated Completion Date | Status | |
|----------------------|----------------------------------|----------------------|------------|--|-----------|----------|
| 26 | Ammonia E | misisons | | December 2005 | Completed | |
| Report Location | http://www.pra | analytica.com/pdf/ | MST-16- | 1547-2005.pdf | | |
| Project Name | | | | | | |
| Laser-based Sens | ors for Monitor | ing Ammonia Emi | ssions | | | |
| Project Description | 1 | | | | | |
| for measuring amb | oient ammonia Davis where the | in agricultural sett | ings. Fiel | acoustic spectroscopy has beer d testing was performed in envi n cows were allowed to accumu | ronmental | |
| PI 1 | Af | filiation PI 1 | | Fund Source 1 | | Amount 1 |
| C. Patel | P | ranalytica | | USDA - SBIR I | | \$20,000 |
| PI 2 | Af | filiation PI 2 | | Fund Source 2 | | Amount 2 |
| F. Mitloehner | U | C Davis | | | | |
| PI 3 | Af | filiation PI 3 | | Fund Source 3 | | Amount 3 |
| | | | | | | |
| Related info 1 | | | | | | |
| \$79,000 total; \$20 | 0,000 for Mitloe | hner portion | | | | |
| Related info 2 | | | | | | |
| Institute of Physics | s Publishing, M | eas. Sci. Technol. | 16 (200 | 5) 1547-1553 | | |
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| Project Name Laser-based Sensors for Mor | nia Emisisons v.iop.org/EJ/abstract/0957-02 | | ompleted |
|---|---|---|----------|
| Project Name Laser-based Sensors for Mor Project Description | | 233/16/8/002 | |
| Laser-based Sensors for Mor Project Description | nitoring Ammonia Emissions | | |
| Project Description | nitoring Ammonia Emissions | | |
| - | | | |
| A 44444 4444 4444 4444 4444 4444 4444 | | | |
| for measuring ambient ammo | nia in agricultural settings. F the excreta from three Holst | otoacoustic spectroscopy has been deviced testing was performed in environmed tein cows were allowed to accumulate, | nental |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Patel | Pranalytica | USDA - SBIR II | \$75,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| F. Mitloehner | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | |
| Related info 1 \$350,000 (\$75,000 for Mitloek Related info 2 | nner portion) | | |

California Air Resources Board Summary of Agricultural Emissions Studies

1/29/2010

| Project ID | Project Type | | Estimated Completion Date | Status |
|--------------------|---------------------------------|---|--|----------------|
| 28 | Livestock Stu | ıdy | July 2005 | Completed |
| Report Location | 08/24/07 Pork E 159-MITLOEHN | Board abstract։ http NER.ABS.8-27-04.ր | o://www.pork.org/PorkScience/Research pdf | /Documents/03- |
| Project Name | | | | |
| Effect of Atmosph | neric Ammonia on | Pig Welfare | | |
| Project Descriptio | ın | | | |
| | | | | |
| PI 1 | | iation PI 1 Davis | Fund Source 1 National Pork Board | Amount 1 |
| F. Mitloehner | luc luc | Davis | National Pork Board | \$40,000 |
| PI 2 | Affili | iation PI 2 | Fund Source 2 | Amount 2 |
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| PI 3 | Affili | iation PI 3 | Fund Source 3 | Amount 3 |
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| Related info 1 | , | | · · · | <u>'</u> |
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| Related info 2 | | | | |
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| Project ID | Project Type | Estimated Completion Date | Status |
|--|--|--|---------------|
| | Worker Exposure | September 2011 | In progress |
| Report Location | | , | |
| Project Name | | | |
| Respiratory Exposures | s and Health of Workers on Califor | rnia Dairies (NIOSH) | |
| Project Description | | | |
| Monitor exposures of 2 | 200 dairy workers at large dairies t ints highly associated with respirat | to dust and ammonia to define the co tory problems. | oncentrations |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| F. Mitloehner | UC Davis | NIOSH | \$1,700,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| M. Schenker | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| D. Bennett | Ailliauorris | r und Source 3 | Amount 3 |
| Related info 1 UC Davis' program - C Related info 2 Field phase in progres | CA Dairy Environ Health Research | Inititative (Cal-DEHRI) | |

| Report Location Report of Jan. 10, 2007 available at: http://www.arb.ca.gov/research/apr/past/04-334.pdf Project Name Investigation of Atmospheric Ozone Impacts of Selected Pesticides Project Description Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available. PI 1 W. Carter Affiliation PI 1 UC Riverside Affiliation PI 2 Fund Source 1 Amount 1 W. Carter Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 | Project ID | Project ⁻ | Туре | | Estimated Completion Date | Status | |
|---|-----------------------------------|----------------------|---|------|-----------------------------------|----------|-----------|
| Project Name Investigation of Atmospheric Ozone Impacts of Selected Pesticides Project Description Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available. PI Affiliation PI 1 | 30 | Pesticid | e Study | | February 2006 | Compl | eted |
| Investigation of Atmospheric Ozone Impacts of Selected Pesticides Project Description Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available. PI 1 W. Carter Affiliation PI 1 UC Riverside Affiliation PI 2 Fund Source 1 ARB \$100,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 | Report Location | Report of C | Jan. 10, 2007 available at: | http | ://www.arb.ca.gov/research/apr/p | ast/04-3 | 34.pdf |
| Project Description Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available. PI 1 W. Carter Affiliation PI 1 UC Riverside Affiliation PI 2 Fund Source 1 ARB \$100,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | Project Name | | | | | | |
| Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available. PI 1 W. Carter Affiliation PI 1 UC Riverside Affiliation PI 2 Fund Source 1 ARB \$100,000 PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 | Investigation of At | mospheric (| Ozone Impacts of Selected | Pe | sticides | | |
| which such estimates are not currently available. PI 1 W. Carter Affiliation PI 1 UC Riverside Affiliation PI 2 Fund Source 1 ARB \$100,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 | | | | | | | |
| W. Carter UC Riverside ARB \$100,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | Develop methods which such estima | for estimati | ing and quantifying ozone in currently available. | mpa | acts for selected pesticide compo | unds for | |
| PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Fund Source 3 Amount 3 Related info 1 | PI 1 | | | | | | Amount 1 |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | W. Carter | | UC Riverside | | ARB | | \$100,000 |
| Related info 1 | PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| Related info 1 | | | | | | | |
| | PI 3 | | Affiliation PI 3 | | Fund Source 3 | j | Amount 3 |
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| Related info 2 | Related info 1 | | , | | | • | |
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| Pesticide Study June 2007 Completed | Report Location http://www.reeis.usda.gov/web/crisprojectpages/204179.html Project Name Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. Affiliation PI 1 | Project ID | Project Type | | Estimated Completion Date | Status |
|--|--|--|---|---------------------------------|----------------------------------|------------|
| Project Name Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. PI 1 B. Flocchini PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Amount 3 M. Kleeman | Project Name Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. Affiliation PI 1 | 31 | | | | Completed |
| Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. PI 1 B. Flocchini PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Amount 3 Fund Source 3 Amount 3 | Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural posticide applications in the San Joaquin Valley. Affiliation PI 1 UC Davis Fund Source 1 USDA Affiliation PI 2 UC Davis PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Amount 3 Amount 3 Fund Source 3 Amount 3 | Report Location | nttp://www.reeis.usda | .gov/web/crisproje | ctpages/204179.html | |
| Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. PI 1 | Project Description Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural posticide applications in the San Joaquin Valley. Affiliation Pl 1 | | | | | |
| Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley. Pl 1 | Affiliation PI 2 R. Higashi Affiliation PI 3 M. Kleeman Affiliation PI 3 UC Davis Amount 3 Amount 3 | Agricultural Pesticid | e VOC Sources and | their Photochemic | al Ozone Formation Potential | |
| PI 1 B. Flocchini PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis PI 3 M. Kleeman Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Amount 3 Amount 3 Amount 3 | Affiliation PI 1 UC Davis PI 2 R. Higashi Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis Fund Source 1 USDA Fund Source 1 USDA \$400,000 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Amount 3 Amount 3 Amount 3 Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | | | | | |
| B. Flocchini PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Amount 3 | Affiliation PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Improve current und pesticide application | erstanding of the pho s in the San Joaquin | otochemical O3 for I Valley. | mation potential of VOCs from ag | ricultural |
| PI 2 R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Amount 3 Amount 3 | Affiliation PI 2 UC Davis Affiliation PI 3 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Celated info 1 Control of the provided HTML interpretation of the provi | PI 1 | Affiliation | PI 1 | Fund Source 1 | Amount 1 |
| R. Higashi PI 3 M. Kleeman Affiliation PI 3 UC Davis Fund Source 3 Amount 3 UC Davis Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | R. Higashi PI 3 Affiliation PI 3 UC Davis Fund Source 3 Amount 3 UC Davis Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | B. Flocchini | UC Davis | | USDA | \$400,000 |
| PI 3 M. Kleeman Affiliation PI 3 UC Davis Fund Source 3 Amount 3 Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | Affiliation PI 3 UC Davis Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | | Affiliation | PI 2 | Fund Source 2 | Amount 2 |
| M. Kleeman UC Davis Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | M. Kleeman UC Davis Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | R. Higashi | UC Davis | | | |
| Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | Related info 1 http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | | Affiliation | PI 3 | Fund Source 3 | Amount 3 |
| http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf | M. Kleeman | UC Davis | | | |
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| Related info 2 | Related info 2 | http://airquality.ucda | vis.edu/pages/events | s/2008/green_acre | s/GREEN.pdf | |
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| Emissions Mitigation 2005 Completed | Emissions Mitigation 2005 Completed | Emissions Mitigation 2005 Completed | Project ID | Project Type | Estimated Completion Date | Status |
|--|--|---|---------------------|---------------------------------|---|----------|
| Project Name Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan D. Sullivan D. Sullivan Fund Source 1 Sullivan Environmental Consulting Fund Source 1 USDA \$78,000 \$78,000 PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Project Name Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 | Project Name Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan PI 2 H. Ajwa Affiliation PI 2 Fund Source 1 USDA \$78,000 Fund Source 2 Amount 2 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | - | | | |
| Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan D. S | Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. Affiliation PI 1 | Commercialization of Intermittent Water Sealing Project Description Identify optimal water management strategies for water sealing commercial-scale application of furnigants. PI 1 D. Sullivan PI 2 H. Ajwa Affiliation PI 2 Affiliation PI 2 Fund Source 1 USDA \$78,000 \$78,000 PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 Fund Source 2 Amount 3 Fund Source 3 Amount 3 Amount 3 | Report Location | http://mbao.org/2005/MBAO%202 | 2005%20pdfs/Preplant/8/Sullivan.pdf | |
| Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan D. Sullivan Environmental Consulting Fund Source 1 Sullivan Environmental Consulting Fund Source 2 Amount 2 Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan PI 2 H. Ajwa Affiliation PI 2 Fund Source 1 Sullivan Environmental Consulting Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Project Description Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 D. Sullivan D. Sullivan Environmental Consulting PI 2 H. Ajwa Affiliation PI 1 Sullivan Environmental Consulting Affiliation PI 2 Fund Source 1 Sullivan Environmental Consulting Fund Source 2 Amount 2 Amount 2 Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 Amount 3 Related info 1 CDPR participated in the study | | | | |
| Identify optimal water management strategies for water sealing commercial-scale application of fumigants. | Identify optimal water management strategies for water sealing commercial-scale application of fumigants. | Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 | Commercialization | n of Intermittent Water Sealing | | |
| Identify optimal water management strategies for water sealing commercial-scale application of fumigants. | Identify optimal water management strategies for water sealing commercial-scale application of fumigants. | Identify optimal water management strategies for water sealing commercial-scale application of fumigants. PI 1 | Project Description | า | | |
| D. Sullivan Sullivan Environmental Consulting PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 CDPR participated in the study | D. Sullivan Sullivan Environmental Consulting PI 2 H. Ajwa PI 3 J. Radewald Related info 1 CDPR participated in the study Sullivan Environmental Consulting Fund Source 2 Amount 2 Fund Source 3 Amount 3 | D. Sullivan Sullivan Environmental Consulting PI 2 H. Ajwa PI 3 J. Radewald Related info 1 CDPR participated in the study Sullivan Environmental Consulting Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Identify optimal wa | | er sealing commercial-scale applicatior | n of |
| Consulting PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 PI 3 J. Radewald Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 CDPR participated in the study | Consulting PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 PI 3 J. Radewald Related info 1 CDPR participated in the study | Consulting PI 2 H. Ajwa Affiliation PI 2 Fund Source 2 Amount 2 PI 3 J. Radewald Related info 1 CDPR participated in the study | PI 1 | | | Amount 1 |
| H. Ajwa PI 3 J. Radewald Related info 1 CDPR participated in the study | H. Ajwa PI 3 J. Radewald Related info 1 CDPR participated in the study | PI 3 J. Radewald Related info 1 CDPR participated in the study | D. Sullivan | | USDA | \$78,000 |
| PI 3 J. Radewald Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 CDPR participated in the study | PI 3 J. Radewald Related info 1 CDPR participated in the study | PI 3 J. Radewald Fund Source 3 Amount 3 Related info 1 CDPR participated in the study | | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| J. Radewald Related info 1 CDPR participated in the study | J. Radewald Related info 1 CDPR participated in the study | J. Radewald Related info 1 CDPR participated in the study | H. Ajwa | | | |
| J. Radewald Related info 1 CDPR participated in the study | J. Radewald Related info 1 CDPR participated in the study | J. Radewald Related info 1 CDPR participated in the study | DI 3 | Affiliation PL3 | Fund Source 3 | Amount 3 |
| CDPR participated in the study | CDPR participated in the study | CDPR participated in the study | | Ailliation 13 | I und Source 3 | Amount 5 |
| CDPR participated in the study | CDPR participated in the study | CDPR participated in the study | | | | |
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| Related info 2 | Related info 2 | Related info 2 | CDPR participated | d in the study | | |
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| Project Name Improved Statewide Estimates Project Description | Emisisons epa.gov/ttn/chief/conference | Estimated Completion Date December 2005 e/ei12/part/krauter.pdf (2003) m Native Soils in California | Completed |
|---|---|---|-----------|
| Project Name Improved Statewide Estimates Project Description | | | |
| Improved Statewide Estimates Project Description | of Ammonia Emissions fror | n Native Soils in California | |
| Project Description | of Ammonia Emissions fror | m Native Soils in California | |
| | | | |
| | nona emission factors and | modeling for native soils within Cali | fornia |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Krauter | CSU Fresno | ARB | \$200,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| C. Potter | NASA Ames | | |
| | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| S. Klooster | CSU Monterey | | |
| Related info 1 http://geo.arc.nasa.gov/sge/cas Related info 2 | a/regional/california.html | | |

| Report Location Partial, 2005 EPA conference. http://www.epa.gov/ttn/chief/conference/ei14/index.html (search Krauter) Project Name Monitoring of Ammonia Emissions from Crop Production With a Tunable Diode Laser Project Description Evaluate the use of a TDL system for the determination of ambient ammonia levels and ammonia emissions from specific agricultural operations. PI | Project ID Pr | roject Type | Estimated Completion Date | Status |
|--|--|---|-------------------------------------|----------------|
| Search Krauter | 34 Cı | rop Study | June 2005 | Completed |
| Monitoring of Ammonia Emissions from Crop Production With a Tunable Diode Laser Project Description Evaluate the use of a TDL system for the determination of ambient ammonia levels and ammonia emissions from specific agricultural operations. Affiliation PI 1 CSU Fresno PI 2 D. Goorahoo PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Affiliation PI 3 CSU Fresno Fund Source 1 CSU Agricultural Research Initiative \$296,000 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Report Location Part (sea | tial, 2005 EPA conference. http://vrch Krauter) | www.epa.gov/ttn/chief/conference/ei | 14/index.html |
| Project Description Evaluate the use of a TDL system for the determination of ambient ammonia levels and ammonia emissions from specific agricultural operations. PI 1 | Project Name | | | |
| Evaluate the use of a TDL system for the determination of ambient ammonia levels and ammonia emissions from specific agricultural operations. PI 1 | Monitoring of Ammonia | Emissions from Crop Production V | Vith a Tunable Diode Laser | |
| PI 1 C. Krauter Affiliation PI 1 C. Krauter Affiliation PI 2 D. Goorahoo PI 3 B. Goodrich Affiliation PI 3 C. SU Fresno Related info 1 \$296,000 ARI to match ARB and UniSearch funding | Project Description | | | |
| C. Krauter C. Krauter CSU Fresno CSU Agricultural Research Initiative \$296,000 Affiliation PI 2 CSU Fresno Fund Source 2 Amount 2 CSU Fresno Affiliation PI 3 CSU Fresno Fund Source 3 Amount 3 CSU Fresno Related info 1 \$296,000 ARI to match ARB and UniSearch funding | Evaluate the use of a TI emissions from specific | DL system for the determination of agricultural operations. | ambient ammonia levels and amm | onia |
| PI 2 D. Goorahoo PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Affiliation PI 3 CSU Fresno Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Selated info 1 \$296,000 ARI to match ARB and UniSearch funding | PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| D. Goorahoo CSU Fresno Affiliation PI 3 CSU Fresno Fund Source 3 Amount 3 CSU Fresno Related info 1 \$296,000 ARI to match ARB and UniSearch funding | C. Krauter | CSU Fresno | CSU Agricultural Research Initia | tive \$296,000 |
| PI 3 B. Goodrich Affiliation PI 3 CSU Fresno Fund Source 3 Amount 3 Related info 1 \$296,000 ARI to match ARB and UniSearch funding | PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| B. Goodrich CSU Fresno Related info 1 \$296,000 ARI to match ARB and UniSearch funding | D. Goorahoo | CSU Fresno | | |
| Related info 1 \$296,000 ARI to match ARB and UniSearch funding | PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| \$296,000 ARI to match ARB and UniSearch funding | B. Goodrich | CSU Fresno | | |
| | Related info 1 | ADD and HaiCoursh funding | , | |
| Related info 2 | \$296,000 ART to match | ARB and UniSearch lunding | | |
| | Related info 2 | | | |
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| Project ID | Project ' | Туре | | Estimated Completion Date | Status | ; |
|---------------------|-------------|--------------------------------------|-------|---|----------|-----------|
| 35 | PM Em | issions | | 2011 (CA in 2009) | In Pro | gress |
| Report Location | Quarterly | reports submitted durigng | g res | earch phase | | |
| Project Name | | | | | | |
| Cotton Gin PM Em | issions Re | search | | | | |
| Project Description | | | | | | |
| emissions (CTM-03 | 39, P 2.5 S | tack Sampling Method). [| Deve | ch may significantly over-estimate lop PM dispersion models for PM ize, shape. Six test sites, 1 in CA. | 110, PM2 | 2.5, |
| PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| M. Buser | | USDA ARS Lubbock TX | X | Various cotton industry and gini associations | ners | \$147,500 |
| PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| D. Whitelock | | ARS - SWCotton Ginning Research Lab, | | ARB | | \$45,000 |
| PI 3 | | Affiliation PI 3 | | Fund Source 3 | j | Amount 3 |
| C. Boykin | | Cotton Ginning Research Unit, | | SJVAPCD | | \$36,000 |
| Related info 1 | | | | | | |
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| Related info 2 | | | | | | |
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California Air Resources Board Summary of Agricultural Emissions Studies

1/29/2010

| Project ID | Project 7 | Type | Estimated Completion Date | Status |
|--|--------------|---------------------------|---------------------------|-------------|
| 36 | PM Emi | | 2010 | In Progress |
| Report Location | | | | |
| Project Name | | | | |
| | Emissions fr | rom Raisin Harvesting | | |
| Duning of December (1) | | | | |
| Project Description Evaluate emission | | e different table grape h | parvesting techniques | |
| | | | | |
| PI 1 | | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Krauter | | CSU Fresno | ?? | |
| PI 2 | | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| J. Siliznoff | | | | |
| PI 3 | | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | | |
| Related info 1 | | | | |
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| Related info 2 | | | | |
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| Project ID | Project T | Гуре | | Estimated Completion Date | Status | |
|---------------------|-----------------|------------------------|----------|-----------------------------------|------------------|-----|
| 37 | | ns Mitigation | | 2010 | Drafting Rpeorts | _ |
| Report Location | Draft report | t of Los Banos work is | under re | ivew | , | |
| Project Name | | | | | | |
| Testing to Determ | ine Emission | ns Reductions Achieve | d by Low | ver Emitting Agricultural Practic | es | |
| Project Description | n | | | | | |
| | trol effectiver | | Conserv | ation Management Practices fo | r PM | |
| PI 1 | | Affiliation PI 1 | F | Fund Source 1 | Amoun | t 1 |
| | | | | US EPA RARE | | |
| PI 2 | | Affiliation PI 2 | F | Fund Source 2 | Amoun | t 2 |
| | | | | | | |
| PI 3 | | Affiliation PI 3 | F | Fund Source 3 | Amoun | t 3 |
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| Project ID | Project Type | Estimated Completion Date | Status |
|---|---------------------------------|---|---------------|
| 38 | N2O Emissions | 2011 | In Progress |
| Report Location | , | , , | |
| Project Name | | | |
| Fertilizer N2O Resea Cropping Systems | arch, Assessment of Baseline Ni | trous Oxide and Nitric Oxide Emissions | in California |
| Project Description | | | |
| fertilizer practices for | | ods to evaluate flux emissions of N2O us 2009. Crops include almonds, walnuts, t, grapes. | |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| W. Horwath | UC Davis | ARB | \$83,500 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| J. Six | UC Davis | CEC | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| D. Goorahoo | CSU Fresno | CDFA | |
| Related info 1 Project selection dat Related info 2 | es: CEC 8/08, CDFA 10/08, ARE | 3 11/08 | |

| Project ID 39 | Project ⁻ | Туре | | Estimated Completion Date | Status | • |
|---------------------------------------|---|--|-------------------------|--|-------------------------|----------|
| აყ | | missions | | October 2007 | Comp | leted |
| Report Location | presentation http://www | on at CDPR, date unkno v.cdpr.ca.gov/docs/emor | own: n/vocs/v | ocproj/voc_regional_ozone.po | lf | |
| Project Name | | | | | | |
| DPR Round-Robir | VOC Study | у | | | | |
| Project Description | | | | | | |
| the emissions und ozone production | ler field cond on the down eing regulat | ditions to emissions see nwind side, but only slighted but from EtOH in fue | en in trac htly. Mos | ents in pesticide formulations ditional TGA testing. Results s st of the VOC increase after s crease ozone, NOx reduction | showed mo praying is | ore |
| PI 1 | | Affiliation PI 1 | F | Fund Source 1 | | Amount 1 |
| P. Green | | UC Davis | | None; cooperative effort of inc ncluding European partners | dustry | \$0 |
| PI 2 | | Affiliation PI 2 | j | Fund Source 2 | | Amount 2 |
| | | | | | | |
| PI 3 | | Affiliation PI 3 | j. | Fund Source 3 | j | Amount 3 |
| | | | | | | |
| Related info 2 | | | | | | |

| Project ID 40 Report Location | Project Type | | |
|------------------------------------|------------------------------------|--|--------------|
| | | Estimated Completion Date | Status |
| Report Location | VOC Emissions | December 2009 | Draft Report |
| Report Location | | | |
| | | | |
| Project Name | | | |
| Reducing Emissions | of VOCs from Agricultural Soil F | umigation, ARB contract 05-351 | |
| D : (D : () | | | |
| Project Description | or oursulative and hourly emission | ns rates from laboratory, field plot and p | prodictivo |
| models which will be strategies | compared to previous large-scal | le field experiments on several emission | n reduction |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| Jay Gan | UC Riverside | ARB | \$200,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| Scott Yates | USDA-Riverside | USDA-ARS? | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | SJVAPCD? | |
| Related info 1 | | | |
| ARB agreement 05-3 | 351 | | |
| Related info 2 | | | |
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| Manure Digester August 2001 Completed | Project ID 41 | | Estimated Completion Date | Status |
|---|---------------------|-----------------------------------|--|----------|
| Project Name Interim Report: Sources and Sinks of PM10 in the San Joaquin Valley, August 2001 Project Description Evaluate on-field PM10 emissions. Evaluate PM10 and ammona emissions for feedlots and dairies. Affiliation PI 1 UC Davis PI 2 T. Cassel Affiliation PI 2 UC Davis Fund Source 1 USDA Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Amount 3 Related info 1 | | | | |
| Interim Report: Sources and Sinks of PM10 in the San Joaquin Valley, August 2001 Project Description Evaluate on-field PM10 emissions. Evaluate PM10 and ammona emissions for feedlots and dairies. Affiliation PI 1 UC Davis PI 2 T. Cassel Affiliation PI 2 UC Davis Fund Source 1 USDA Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Report Location | http://www.arb.ca.gov/app/librar | y/libcc.php (Search on author = Flocchin | i) |
| Project Description Evaluate on-field PM10 emissions. Evaluate PM10 and ammona emissions for feedlots and dairies. Pl 1 R. Flocchini Pl 2 T. Cassel Pl 3 Affiliation PI 2 UC Davis PI 3 Affiliation PI 3 Fund Source 1 USDA Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Project Name | | | |
| Evaluate on-field PM10 emissions. Evaluate PM10 and ammona emissions for feedlots and dairies. PI 1 R. Flocchini PI 2 T. Cassel PI 3 Affiliation PI 2 UC Davis Fund Source 1 USDA Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Interim Report: So | ources and Sinks of PM10 in the S | San Joaquin Valley, August 2001 | |
| Evaluate on-field PM10 emissions. Evaluate PM10 and ammona emissions for feedlots and dairies. PI 1 R. Flocchini PI 2 T. Cassel PI 3 Affiliation PI 2 UC Davis Fund Source 1 USDA Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 | Project Description | n | | |
| R. Flocchini UC Davis USDA Affiliation PI 2 Fund Source 2 Amount 2 UC Davis Fund Source 3 Amount 3 Related info 1 | Evaluate on-field I | PM10 emissions. Evaluate PM10 | and ammona emissions for feedlots and | dairies. |
| PI 2 T. Cassel PI 3 Affiliation PI 2 UC Davis Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 | PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| T. Cassel PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | R. Flocchini | UC Davis | USDA | |
| T. Cassel PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 | PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| Related info 1 | T. Cassel | | | |
| Related info 1 | PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
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| Ammonia Emisisons June 2001 Completed | Project ID | Project 7 | Гуре | | Estimated Completion Date | Status | |
|--|---|---------------------------|---|---------|-------------------------------------|-------------|-----------|
| Project Name Statewide Inventory Estimates of Ammonia Emissions from Native Soils and Chemical Fertilizers in California Project Description Measure and model ammonia emissions from agricultural fertilizer application and natural soils. Report available at: ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf PI 1 | 42 | | | | | | ed |
| Statewide Inventory Estimates of Ammonia Emissions from Native Soils and Chemical Fertilizers in California Project Description Measure and model ammonia emissions from agricultural fertilizer application and natural soils. Report available at: ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf PI 1 | Report Location | http://www | .arb.ca.gov/app/library/lib | cc.ph | p (search on author = Potter) | | |
| California Project Description Measure and model ammonia emissions from agricultural fertilizer application and natural soils. Report available at: ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf PI 1 | Project Name | | | | | | |
| Measure and model ammonia emissions from agricultural fertilizer application and natural soils. Report available at: ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf PI 1 | Statewide Inventor California | ry Estimates | of Ammonia Emissions | from | Native Soils and Chemical Fertili | zers in | |
| available at: ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf PI 1 C. Krauter Affiliation PI 1 CSU Fresno ARB S186,425 PI 2 C. Potter Affiliation PI 2 NASA Ames Affiliation PI 3 S. Klooster Related info 1 | | | | | | | |
| C. Krauter CSU Fresno ARB \$186,425 PI 2 C. Potter NASA Ames Affiliation PI 2 NASA Ames Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 CSU Monterey | Measure and mode available at: ftp://ft | el ammonia p.arb.ca.go | emissions from agricultu v/carbis/reports/l522.pdf | iral fe | rtilizer application and natural so | ils. Report | |
| PI 2 C. Potter Affiliation PI 2 NASA Ames PI 3 S. Klooster Affiliation PI 3 CSU Monterey Fund Source 2 Amount 2 Amount 3 Fund Source 3 Amount 3 | PI 1 | | | | Fund Source 1 | | |
| C. Potter NASA Ames Affiliation PI 3 S. Klooster Related info 1 | C. Krauter | | CSU Fresno | | ARB | | \$186,425 |
| PI 3 S. Klooster Affiliation PI 3 CSU Monterey Fund Source 3 Amount 3 Related info 1 | PI 2 | | Affiliation PI 2 | | Fund Source 2 | | Amount 2 |
| S. Klooster CSU Monterey Related info 1 | | | NASA Ames | | | | |
| S. Klooster CSU Monterey Related info 1 | PI 3 | | Affiliation PI 3 | | Fund Source 3 | | Amount 3 |
| | S. Klooster | | CSU Monterey | | | | |
| Related info 2 | Related info 1 | | | | | | |
| | Related info 2 | | | | | | |
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| PM Emissions June 1996 Completed | Project ID | Project Ty | /pe | | Estimated Completion Date | Status | |
|---|---------------------|---------------|----------------------|------------|-----------------------------------|----------|----------|
| Project Name Results of the Measurement of PM10 Precursor Compounds from Dairy Industry Livestock Waste Project Description Using environmental flux chambers, evaluate dairy ammonia and ROG emissions. PI 1 C. Schmidt PI 2 Affiliation PI 1 Consultant Fund Source 1 South Coast AQMD Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | 43 | | | | | Complete | ed |
| Results of the Measurement of PM10 Precursor Compounds from Dairy Industry Livestock Waste Project Description Using environmental flux chambers, evaluate dairy ammonia and ROG emissions. Affiliation PI 1 Consultant Fund Source 1 South Coast AQMD Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | Report Location | http://www.e | pa.gov/ttn/chief/co | nference/e | ei14/session1/schmidt.pdf | | |
| Project Description Using environmental flux chambers, evaluate dairy ammonia and ROG emissions. PI 1 C. Schmidt PI 2 Affiliation PI 1 Consultant Fund Source 1 South Coast AQMD Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | Project Name | | | | | | |
| Using environmental flux chambers, evaluate dairy ammonia and ROG emissions. PI 1 C. Schmidt PI 2 Affiliation PI 1 Consultant Affiliation PI 2 Fund Source 1 South Coast AQMD Fund Source 2 Amount 2 Fund Source 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Results of the Meas | surement of | PM10 Precursor Co | ompounds | s from Dairy Industry Livestock V | /aste | |
| PI 1 C. Schmidt PI 2 Affiliation PI 1 Consultant Fund Source 1 South Coast AQMD Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Project Description | | | | | | |
| C. Schmidt Consultant South Coast AQMD Affiliation PI 2 Fund Source 2 Amount 2 Affiliation PI 3 Fund Source 3 Amount 3 Fund Source 3 | Using environmenta | al flux chaml | oers, evaluate dairy | / ammonia | a and ROG emissions. | | |
| PI 2 Affiliation PI 2 Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | C. Schmidt | | Consultant | | South Coast AQMD | | |
| Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | PI 2 | | Affiliation PI 2 | | Fund Source 2 | ĺ | Amount 2 |
| Related info 1 http://www.aqmd.gov/rules/proposed/pr1127.html | | | | | | | |
| http://www.aqmd.gov/rules/proposed/pr1127.html | PI 3 | j | Affiliation PI 3 | | Fund Source 3 | İ | Amount 3 |
| http://www.aqmd.gov/rules/proposed/pr1127.html | | | | | | | |
| | Related info 1 | | | | | ' | |
| Related info 2 | http://www.aqmd.go | ov/rules/prop | osed/pr1127.html | | | | |
| | Related info 2 | | | | | | |
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| Project ID | Project Ty | ype | Estimated Completion Date | Status |
|---------------------|---------------|-----------------------|-------------------------------|-----------|
| 44 | VOC Emi | | January 1995 | Completed |
| Report Location | | | ' | , |
| Project Name | | | | |
| Results of the Mea | asurement of | Volatile Organic Cor | mpounds from Livestock Wastes | |
| Project Description | n | | | |
| | | s from dairies in the | Sacramento region. | |
| PI 1 | | Affiliation PI 1 | Fund Source 1 | Amoun |
| C. Schmidt | | Consultant | US EPA | |
| PI 2 | | Affiliation PI 2 | Fund Source 2 | Amoun |
| | | | | |
| PI 3 | | Affiliation PI 3 | Fund Source 3 | Amoun |
| | | | | |
| Related info 1 | | | | |
| http://www.4clean | air.org/Docum | nents/APCODetermi | nation.pdf | |
| Related info 2 | | | | |
| Ttolatod IIIIO 2 | | | | |
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| Survey Current Livestock Waste Management Practices in the South Coast Air Basin Project Description Evaluate manure management practices in the SCAQMD http://www.aqmd.gov/rules/proposed/pr1127.html PI 1 | | | | |
|---|------------------------------|----------------------------|-----------------------------|-----------|
| Dairy Waste Management | Project ID Project | Туре | Estimated Completion Date | Status |
| Project Name Survey Current Livestock Waste Management Practices in the South Coast Air Basin Project Description Evaluate manure management practices in the SCAQMD http://www.aqmd.gov/rules/proposed/pr1127.html PI 1 | | | January 2002 | Completed |
| Project Name Survey Current Livestock Waste Management Practices in the South Coast Air Basin Project Description Evaluate manure management practices in the SCAQMD http://www.aqmd.gov/rules/proposed/pr1127.html PI 1 | Describeration but the three | | | |
| Survey Current Livestock Waste Management Practices in the South Coast Air Basin Project Description Evaluate manure management practices in the SCAQMD http://www.aqmd.gov/rules/proposed/pr1127.html PI 1 Egigian-Nichols PI 2 Affiliation PI 1 Tetra Tech Inc South Coast AQMD Fund Source 2 Amount 2 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 | nttp://www | aqma.gov/rules/support.ntr | ni | |
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| Report Location http://www.aqmd.gov/rules/support.html Project Name Literature Survey and National Programs, Livestock Waste Management Practices Survey and Control Option Assessment Project Description Literature survey of waste management and control options. http://www.aqmd.gov/rules/proposed/pr1127.html PI | Report Location http://www.aqmd.gov/rules/support.html Project Name Literature Survey and National Programs, Livestock Waste Management Practices Survey and Control Option Assessment Project Description Literature survey of waste management and control options. http://www.aqmd.gov/rules/proposed/pr1127.html PI | Project ID | Project Type | Estimated Completion Date | Status |
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| Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | Project Name Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment | http://www.aqmd.gov/rules/support.html | http://www.aqmd.gov/rules/support.html | | | | |
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| | Project Type | Estimated Completion Date Sta | atus |
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| 48 | Livestock Waste Management | December 2003 | mpleted |
| Report Location h | ttp://amarillo.tamu.edu/~bauvermani | n/ConferenceProceedings/effectofsprinkl | ing.pdf |
| Project Name | | | |
| Emissions of Particul Partnership | ate Matter and Ammonia from Cattle | e Feedyards and Dairies: a Texas-Califor | rnia |
| Project Description | | | |
| | of water application and manure han or dairy animals (heifers). | vest frequency on PM and NH3 emission | from |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| B. Auvermann | Texas CEC | National Center for Manure and Animal Waste Management | \$12,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| W. Harman | UC Davis | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| D. Meyer | UC Davis | | |
| http://amarillo.tamu.e | edu/~bauvermann/ConferenceProce | edings/index.htm | |

| Project Name Evaluating Dairy Process Emissions Using Flux Chambers Project Description Using environmental flux chambers at a working dairy, evaluate relative emission levels of individual process including lagoons, flush lanes, and corrals. Pl 1 CE Schmidt Affiliation Pl 1 Contractor ARB Affiliation Pl 2 Fund Source 1 ARB \$50,000 Pl 2 Affiliation Pl 2 Fund Source 2 SJVAPCD Affiliation Pl 3 Fund Source 3 Amount 3 Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf | Project ID | Project T | Гуре | Estimated Completion Date | Status |
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| Project Name Evaluating Dairy Process Emissions Using Flux Chambers Project Description Using environmental flux chambers at a working dairy, evaluate relative emission levels of individual process including lagoons, flush lanes, and corrals. PI 1 | 49 | Dairy En | nissions | Complete | Completed |
| Evaluating Dairy Process Emissions Using Flux Chambers Project Description Using environmental flux chambers at a working dairy, evaluate relative emission levels of individual process including lagoons, flush lanes, and corrals. PI 1 | Report Location | Technical I | Memorandum at: http://www. | .arb.ca.gov/ag/caf/SchmidtDairyTe | stData2005.pdf |
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| Using environmental flux chambers at a working dairy, evaluate relative emission levels of individual process including lagoons, flush lanes, and corrals. PI 1 CE Schmidt Affiliation PI 1 Contractor ARB S50,000 PI 2 Affiliation PI 2 Fund Source 1 ARB \$50,000 PI 2 Affiliation PI 2 Fund Source 2 SJVAPCD PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Amount 3 | Evaluating Dairy Pr | rocess Emis | ssions Using Flux Chamber | S | |
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| Final Report May 31, 2006. http://www.arb.ca.gov/ag/cat/MitloehnerDairyChamberEmissions2006.pdf | Project Name Measuring Dairy Cow Emissions in an Environmental Chamber | Report Location Final Report May 31, 2006. http://www.arb.ca.gov/ag/caf/MitloehnerDairyChamberEmissions2006.pdf | Project ID | Project 7 | | | Estimated Completion Date | Status | |
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| http://www.arb.ca.gov/ag/caf/MitloehnerDairyChamberEmissions2006.pdf Project Name Measuring Dairy Cow Emissions in an Environmental Chamber Project Description Place cows into an environmentally controlled chamber and evaluate speciated VOC emissions emitted directly from cows and from fresh waste products. Pl 1 F. Mitloehner Affiliation Pl 1 UC Davis Fund Source 1 US EPA \$75,000 Pl 2 R. Flocchini Affiliation Pl 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 J. Peters Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | Project Name Measuring Dairy Cow Emissions in an Environmental Chamber Project Description Place cows into an environmentally controlled chamber and evaluate speciated VOC emissions emitted directly from cows and from fresh waste products. PI 1 F. Mitloehner PI 2 R. Flocchini PI 3 J. Peters Affiliation PI 3 Affiliation PI 3 Fund Source 1 US EPA \$75,000 Fund Source 2 Amount 2 Fund Source 2 Amount 3 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | http://www.arb.ca.gov/ag/caf/MitloehnerDairyChamberEmissions2006.pdf Project Name Measuring Dairy Cow Emissions in an Environmental Chamber Project Description Place cows into an environmentally controlled chamber and evaluate speciated VOC emissions emitted directly from cows and from fresh waste products. Pl 1 End Source 1 Affiliation Pl 1 UC Davis Pl 2 R. Flocchini Pl 3 Affiliation Pl 2 Fund Source 2 Amount 2 Fund Source 2 Amount 3 Fund Source 3 Amount 3 Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | 50 | Dairy Er | missions | | December 2005 | Complete | ed |
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| J. Peters Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | J. Peters Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | Related info 1 http://www.4cleanair.org/Documents/APCODetermination.pdf Related info 2 | R. Flocchini | | | | | | |
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| Related info 2 | Related info 2 | Related info 2 | Related info 1 | | - | | • | · | |
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| J Environ Qual 37:615-622 (2008) | J Environ Qual 37:615-622 (2008) | J Environ Qual 37:615-622 (2008) | | | | | | | |
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| Project ID | Project Type | E | Estimated Completion Date | Status | |
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| 51 | Dairy Emissions | | | Completed | |
| Demonstration 1 | letter the second second | // | Ob b T ' 0000 If | | - |
| Report Location | http://www.arb.ca.gov | /ag/cat/MitloennerDair | yChamberEmissions2006.pdf | | |
| Project Name | | | | | |
| Volatile Fatty Acids | , Amine, and Phenol I | Emissions from Cows | and their Waste | | |
| Project Description | | | | | |
| Project Description | | | | | |
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| PI 1 | Affiliation | PI 1 | and Source 1 | Amount | 1 |
| F. Mitloehner | UC Davis | | RB | | 0,000 |
| | | | | | |
| PI 2 | Affiliation | | ind Source 2 | Amount | 2 |
| S. Trabue | USDA AF | ₹S | | | |
| PI 3 | Affiliation | PI 3 Fu | and Source 3 | Amount | 3 |
| J. Koziel | ISU | | | | |
| Related info 1 | | | | | |
| | ir.org/Documents/APC | CODetermination pdf | | | |
| Thisp://www.roroana | niorg/200amonio//ii | yo Boton matton par | | | |
| Related info 2 | | | | | |
| http://jeg.scijournal | s.org/cgi/content/full/3 | 37/2/615 | | | |
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| Report Location abstract available at: http://asae.frymulti.com/abstract.asp?aid=20039&t=2 Project Name Improvement of PM10 emission factors for almond harvesting Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 R. Flocchini PI 2 Texas A&M Affiliation PI 2 Texas A&M PI 3 Affiliation PI 3 Fund Source 1 Almond Board of California Fund Source 2 Amount 2 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | Project Name Improvement of PM10 emission factors for almond harvesting Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 R. Flocchini PI 2 C. Parnell Affiliation PI 2 Texas A&M Fund Source 2 Amount 2 | Project ID Proje | ect Type | Estimated Completion Date | Status |
|--|--|---|--|---|-----------|
| Project Name Improvement of PM10 emission factors for almond harvesting Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. Affiliation PI 1 | Project Name Improvement of PM10 emission factors for almond harvesting Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 | 52 PM I | Emissions | June 2004 | Completed |
| Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. Affiliation PI 1 UC Davis Affiliation PI 2 Texas A&M PI 3 Affiliation PI 3 Fund Source 1 Amount 1 Almond Board of California Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Improvement of PM10 emission factors for almond harvesting Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 | Report Location abstract | t available at: http://asae.fryn | nulti.com/abstract.asp?aid=20039&t= | =2 |
| Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. Affiliation PI 1 UC Davis Affiliation PI 2 Texas A&M PI 3 Affiliation PI 3 Fund Source 1 Amount 1 Amount 1 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 | Project Description Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 | Project Name | | | |
| Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. Affiliation PI 1 UC Davis PI 2 C. Parnell PI 3 Affiliation PI 2 Texas A&M PI 3 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 2 Amount 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up. PI 1 | Improvement of PM10 emi | ssion factors for almond harv | resting | |
| Affiliation PI 1 R. Flocchini PI 2 C. Parnell PI 3 Affiliation PI 3 Fund Source 1 Almond Board of California Fund Source 2 Amount 2 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Fund Source | during almond sweeping and pick up. Pl 1 | Project Description | | | |
| R. Flocchini PI 2 C. Parnell Affiliation PI 2 Texas A&M Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | R. Flocchini PI 2 Affiliation PI 2 Texas A&M PI 3 Affiliation PI 3 Fund Source 2 Amount 2 Fund Source 3 Amount 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | Refine existing PM10 emis during almond sweeping a | sion factors for almond harve nd pick up. | sting. Estimates based on measured | J PM10 |
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| C. Parnell PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | C. Parnell PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | | UC Davis | Almond Board of California | |
| PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | PI 3 Affiliation PI 3 Fund Source 3 Amount 3 Related info 1 Results showed that in all instances, the concentrations obtained from using the PM10 sampler were always higher than those obtained from using the TSP sampler. Related info 2 | 기 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
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| | | Results showed that in all all all all all all all all all al | instances, the concentrations | obtained from using the PM10 sampsampler. | oler were |
| | | Related info 2 | _ | · | |
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| Project ID | Project 7 | Туре | | Estimated Completion Date | Status | i |
|--|--|--|-----------------|--|---------------------|-------------|
| 53 | VOC En | nissions | T | July 2007 | Comp | leted |
| Report Location | 2&_user=1 | 1928924&_rdoc=1&_fmt=&_ | or | ob=ArticleURL&_udi=B6VH3-4Si ig=search&_sort=d&view=c&_ve 499a23d500c0127b4460438 | | _urlVersion |
| Project Name | | | | | | |
| Photochemical Ozo | one Format | ion Potential of Agricultural | V | OC Sources | | |
| Davis at Davis disc | | | | | | |
| Project Description | | emissions from dairy cattle v | va | s much lower than predicted usir | a regula | tory |
| profiles. The majori previously thought. ppb and NOx conc. | ity of the oz Ozone forn . were 50 p | zone formation is explained mation potential is generally opb. Results suggest that de | by sı ecr | ethanol (EtOH) emissions, not be mall (<20 ppb) when EtOH conc. reasing ROG (VOC) from dairy ca decreased ozone in the SJV. | y aceton were 20 | ne as |
| PI 1 | | Affiliation PI 1 | | Fund Source 1 | | Amount 1 |
| P. Green | | | | USDA | | \$300,000 |
| PI 2 | | Affiliation PI 2 | ĺ | Fund Source 2 | | Amount 2 |
| F. Mitloehner | | | | | | |
| PI 3 | | Affiliation PI 3 | l | Fund Source 3 | | Amount 3 |
| R. Flocchini | | | | | | |
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| Related info 1 | | | | | | |
| presentation at CD http://www.cdpr.ca. | PR, date ur .gov/docs/e | nknown: emon/vocs/vocproj/voc_regio | ona | al_ozone.pdf | | |
| Related info 2 | | | | | | |
| | port: Go to | http://dx.doi.org and enter " | 'dc | oi:10.1016/j.atmosenv.2008.02.06 | 64" | |
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| Report Location http Project Name Measuring Broiler Emis Project Description | ivestock Emissions :://www.arb.ca.gov/ag/caf/pou | lemisrpt.pdf | npleted |
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| Project Name Measuring Broiler Emis Project Description Measure PM10, ammo | s://www.arb.ca.gov/ag/caf/pou | lemisrpt.pdf | npleted |
| Project Name Measuring Broiler Emis Project Description Measure PM10, ammo | ssions in Tunnel Ventilated Ho | | |
| Measuring Broiler Emis Project Description Measure PM10, ammo | | busing | |
| Project Description Measure PM10, ammo | | ousing | |
| Measure PM10, ammo | nia, and appointed TOC omic | | |
| Measure PM10, ammo during various stages of | nia, and enociated TOC omic | | |
| | f bird growth. | sions emitted from a tunnel ventilated broiler h | nouse |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| M. Summers | CDFA | California Poultry Federation | \$40,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| D. Duke | Foster Farms | | |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
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| Related info 1 | | | |
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| Related info 2 | | | |
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| Project ID Project 7 55 VOC En | | Estimated Completion Date December 2005 | Status Completed |
|---------------------------------|------------------------------|---|---------------------|
| http://www | | oventory Conference - AQTF/Documents/Amarillo_2005/Pr 520AAQTF%20Amarillo%2006-05). | |
| Project Name | | | |
| Evaluating Dairy Reactive Org | anic Gas Emissions | | |
| Project Description | | | |
| and some individually tested o | airy processes. Further stud | • | |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| C. Krauter | CSU Fresno | ARB | \$100,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| D. Goorahoo | CSU Fresno | CSU Foundation | \$20,000 |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| B. Goodrich | CSU Fresno | | |
| Related info 1 | | | |
| http://www.4cleanair.org/Docu | ments/APCODetermination | .pdf | |
| Related info 2 | | | |
| http://www.epa.gov/ttn/chief/co | onference/ei15/session6/be | ene.pdf | |
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| Project Type Manure Study September 2008 In progress |
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| Report Location (When available) http://www.epa.gov/region09/ag/dairy/technologies.html Project Name Dairy Wastewater Treatment Feasibility Study Project Description Resease the feasibility of applying standard wastewater treatment technology to the management of nanure from cows in typical California dairies. EPA plans to incorporate this information into its on-going issessment of technologies for dairy manure management. Pl 1 Trygve Lundquist Affiliation PI 1 Cal-Poly SLO Fund Source 1 Amount 1 US EPA \$19,93 Related info 1 Affiliation PI 3 Fund Source 2 Amount 2 Stelated info 1 Affiliation PI 3 Affiliation PI 3 Related info 1 Affiliation PI 3 Related info 2 |
| Project Name Dairy Wastewater Treatment Feasibility Study Project Description Assess the feasibility of applying standard wastewater treatment technology to the management of manure from cows in typical California dairies. EPA plans to incorporate this information into its on-going assessment of technologies for dairy manure management. 1 |
| Project Description Assess the feasibility of applying standard wastewater treatment technology to the management of nanure from cows in typical California dairies. EPA plans to incorporate this information into its on-going assessment of technologies for dairy manure management. Affiliation PI 1 |
| Affiliation PI 2 Affiliation PI 2 Affiliation PI 3 Affiliation |
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| Trygve Lundquist Cal-Poly SLO US EPA \$19,93 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$13 Affiliation PI 3 Fund Source 3 Amount 3 Selated info 1 http://www.arb.ca.gov/ag/caf/dairypnl/dairypanel.htm |
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| Related info 1 http://www.arb.ca.gov/ag/caf/dairypnl/dairypanel.htm Related info 2 |
| http://www.arb.ca.gov/ag/caf/dairypnl/dairypanel.htm |
| http://www.arb.ca.gov/ag/caf/dairypnl/dairypanel.htm |
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| PI 2 Affiliation PI 2 Fund Source 2 Amour | |
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| Project Name Reducing Emissions of VOCs from Agricultural Soil Fumigation: Comparing Emission Estimates from Simplified Methodology, ARB contract 07-322 Project Description For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 Scott Yates Affiliation PI 1 USDA-ARS-Riverside Affiliation PI 2 Daniel Ashworth Project Name Reducing Emission Estimates from Simplified Methodology, ARB contract 07-322 Project Description For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. Fund Source 1 ARB \$10 Arguer 1 Arguer 1 Arguer 2 Arguer 2 Arguer 3 Arguer 4 Arguer 4 Arguer 5 Arguer 5 Arguer 5 Arguer 5 Arguer 5 Arguer 5 Arguer 6 Arguer 7 Arguer 8 Arguer 7 |
| Project Name Reducing Emissions of VOCs from Agricultural Soil Fumigation: Comparing Emission Estimates from Simplified Methodology, ARB contract 07-322 Project Description For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 Scott Yates Affiliation PI 1 USDA-ARS-Riverside Affiliation PI 2 Daniel Ashworth Fund Source 1 Amour ARB \$10 PI 2 Daniel Ashworth Affiliation PI 2 USDA-ARS PI PI 2 Daniel Ashworth | |
| Reducing Emissions of VOCs from Agricultural Soil Fumigation: Comparing Emission Estimates from Simplified Methodology, ARB contract 07-322 Project Description For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 Scott Yates Affiliation PI 1 USDA-ARS-Riverside Affiliation PI 2 Fund Source 1 ARB \$10 PI 2 Daniel Ashworth DPR \$30 | |
| Simplified Methodology, ARB contract 07-322 Project Description For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 Scott Yates Affiliation PI 1 USDA-ARS-Riverside Affiliation PI 2 Daniel Ashworth DPR \$3 | |
| For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 Scott Yates Affiliation PI 1 USDA-ARS-Riverside Affiliation PI 2 Daniel Ashworth PDR Fund Source 1 ARB \$10 Affiliation PI 2 DPR \$30 Affiliation PI 2 DPR \$30 Amount Scott Yates \$40 Amount Amount ARB \$10 Amount ARB \$10 Amount Amount ARB \$10 Amount ARB \$10 Amount Amount ARB \$10 Amount ARB \$10 Amount ARB \$10 Amount ARB \$10 Amount Amount ARB \$10 Amount ARB \$10 Amount ARB \$10 Amount ARB \$10 Amount Amount ARB \$10 Amount ARB ARB \$10 Amount Amount ARB ARB \$10 Amount Amount ARB | |
| emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. PI 1 | |
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| PI 2 Daniel Ashworth Affiliation PI 2 USDA-ARS DPR State Amount DPR \$5 | ıt 1 |
| Daniel Ashworth USDA-ARS DPR \$5 | 00,000 |
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| Related info 1 | |
| ARB agreement 07-332 | |
| Related info 2 | |
| USDA project 5310-12130-008-05 | |
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| Project ID Pro | eject Type | Estimated Completion Date | Status |
|--|-------------------------------------|---|--------------|
| | n-Ag VOC Emissions | January 2010 | Draft Report |
| | , | | |
| Report Location | | | |
| Project Name | | | |
| Emission of GHGs Resul | Iting from Greenwaste Composti | ing | |
| Desired Description | | | |
| Project Description Construct 5 windrwos me | onitor oxygen nH ammonia nit | rate, nitrite, nitric oxide, methane, hy | /drogen |
| sulfide and moisture at th | ne core of the windrows; collect of | emission flux samples using a isolati de, nitrous oxide, and IVMNEOC for | on flux |
| PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
| Fatih Buyuksonmez | UC San Diego | SJVAPCD | \$198,000 |
| PI 2 | Affiliation PI 2 | Fund Source 2 | Amount 2 |
| | | | \$0 |
| PI 3 | Affiliation PI 3 | Fund Source 3 | Amount 3 |
| | | | \$0 |
| Related info 1 | | | |
| Related info 2 | | | |
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| Project Name NAEMS Project: Air Emissions from California Layer Farms Project Description This project is for conducting a two-year measurement and monitoring of air emissions from a layer farm in CA. The emissions from two mechanically ventilated layer houses are measured. The houses have approximately 68,000 hens in cages. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are collected on ventilation, indoor and outdoor environmental PI 1 R. Zhang Affiliation PI 1 UC Davis Fund Source 1 Ag Air Research Council \$199,000 Fund Source 2 Amount 2 \$0 Related info 1 | Designat ID | | | |
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| This project is for conducting a two-year measurement and monitoring of air emissions from a layer farm in CA. The emissions from two mechanically ventilated layer houses are measured. The houses have approximately 68,000 hens in cages. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are collected on ventilation, indoor and outdoor environmental PI 1 R. Zhang Affiliation PI 1 UC Davis Fund Source 1 Ag Air Research Council \$199,000 PI 2 Affiliation PI 3 Fund Source 2 Amount 2 \$0 Related info 1 | NAEMS Project: Air | r Emissions from California Layer | Farms | |
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| R. Zhang UC Davis Ag Air Research Council \$199,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 | in CA. The emission approximately 68,00 carbon dioxide, vola | ns from two mechanically ventilate 00 hens in cages. The measured e atile organic compounds, total sus | ed layer houses are measured. The hemissions include ammonia, hydroge pended particulates, PM2.5 and PM | nouses have en sulfide, 10. In addition, |
| PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$0 PI 3 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 | PI 1 | Affiliation PI 1 | Fund Source 1 | Amount 1 |
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| Project Name NAEMS Project: Air Emissions from California Broiler Farms Project Description This project is for conducting a two-year measurement and monitoring of air emissions from a broiler farm in CA. The emissions from two mechanically ventilated broiler barns are measured. The two broiler barns house about 42,000 broilers in each chicken production cycle. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, methane, nitrous oxide, ethanol, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are PI 1 R. Zhang Affiliation PI 1 UC Davis Fund Source 1 Ag Air Research Council \$219,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$0 Related info 1 | Project ID | | | |
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| NAEMS Project: Air Emissions from California Broiler Farms Project Description This project is for conducting a two-year measurement and monitoring of air emissions from a broiler farm in CA. The emissions from two mechanically ventilated broiler barns are measured. The two broiler barns house about 42,000 broilers in each chicken production cycle. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, methane, nitrous oxide, ethanol, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are PI 1 R. Zhang Affiliation PI 1 UC Davis Fund Source 1 Ag Air Research Council \$219,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$0 Related info 1 | Report Location | | - · · | |
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| R. Zhang UC Davis Ag Air Research Council \$219,000 PI 2 Affiliation PI 2 Fund Source 2 Amount 2 \$0 Affiliation PI 3 Fund Source 3 Amount 3 \$0 Related info 1 | in CA. The emission house about 42,00 ammonia, hydrogen | ons from two mechanically ventilate 00 broilers in each chicken production en sulfide, carbon dioxide, methane, | d broiler barns are measured. The twon cycle. The measured emissions in nitrous oxide, ethanol, volatile organ | o broiler barns clude ic compounds, |
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